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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,599	03/24/2004	Deming Shu	ANL-IN-02-072	3666

7590 08/07/2006  
Joan Pennington  
535 North Michigan Avenue Unit #1804  
Chicago, IL 60611

EXAMINER

DOERRLER, WILLIAM CHARLES

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/807,599

Applicant(s)

SHU ET AL.

Examiner

William C. Doerrler

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-24-2004
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, "said liquid nitrogen reservoir" lacks clear antecedent basis. Is claim 5 intended to depend from claim 4, which claims the reservoir?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2,3,6-8,10-12,14-17,19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafer (2004/0008,814) in view of either Kim et al or Scheinman.

Shafer '814 discloses applicants' basic inventive concept, a robot arm associated with a cryostat, with an automatic opener for the lid, to prepare and preserve samples, as well as provide a means for removal of the samples, substantially as claimed with the exception of using strain gauges on the fingers of the robot to ensure proper grasping. Kim et al (paragraph 28) and Scheinman (column 1 lines 44-56 and column 3 lines 9-45) each show this feature to be old in the robotic arm art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of either Kim et al or Scheinman et al to modify the robotic arm and cryostat system of Shafer by using strain gauges on the fingers of the robot to ensure proper grasping of the samples being removed. In regard to claim 2, see Shafer's heater 72. In regard to claim 6, Shafer shows pins and bases which cooperate to form mounting platforms. In regard to claim 8, the number of strain gauges is seen as well within the scope of the ordinary practitioner in the art to ensure proper control of the arm. It is further noted that as currently written, claim 8 seems to put all three strain gauges at the same place on the finger.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafer '814 in view of either Kim et al or Scheinman as applied to claims 1-3,6-8,10-12,14-17,19 and 20 above, and further in view of Volker.

Shafer '814, as modified, discloses applicant's basic inventive concept, an automatic cryostat and robotic arm combination for the preparation and movement of samples, substantially as claimed with the exception of using a nitrogen spray on the samples when being moved. Volker's reference numeral 11 refers to a nozzle to spray nitrogen on subjects being moved. It would have been obvious to an ordinary practitioner in the art at the time of applicants' invention from the teaching of Volker to modify the automatic cryostat and robotic arm of Shafer by using a nitrogen spray on the samples being moved to keep the samples in an inert and cold atmosphere.

Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafer '814 in view of either Kim et al or Scheinman as applied to claims 1-3,6-8,10-12,14-17,19 and 20 above, and further in view of Olsen et al.

Shafer, as modified, discloses applicant's basic inventive concept, an automatic cryostat and robotic arm combination for the preparation and movement of samples, substantially as claimed with the exception of using a nitrogen spray on the samples when being moved, and using video to control the direction of the robotic arm. Olsen et al's paragraph discusses a nozzle to spray nitrogen on subjects being moved as well as supplying a video stream to the user. It would have been obvious to an ordinary practitioner in the art at the time of applicants' invention from the teaching of Olsen et al to modify the automatic cryostat and robotic arm of Shafer by using a nitrogen spray on the samples being moved to keep the samples in an inert and cold atmosphere and using video to enable the user to see where the arm is going and the information derived from the sample.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafer '814 in view of either Kim et al or Scheinman as applied to claims 1-3,6-8,10-12,14-17,19 and 20 above, and further in view of Ohsato et al.

Shafer, as modified, discloses applicant's basic inventive concept, an automatic cryostat and robotic arm combination for the preparation and movement of samples, substantially as claimed with the exception of using temperature compensation to ensure proper placement of the robotic arm. Ohsato et al show this feature to be old in the art in paragraphs 54,59 and 113. It would have been obvious to an ordinary practitioner in the art at the time of applicants' invention from the teaching of Ohsato et al to use temperature compensation to ensure that the robotic arm and fingers, which will be subject to rather extreme temperature fluctuations, perform as intended.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafer '814 in view of either Kim et al or Scheinman as applied to claims 1-3,6-8,10-12,14-17,19 and 20 above, and further in view of Sugimoto et al.

Shafer, as modified, discloses applicant's basic inventive concept, an automatic cryostat and robotic arm combination for the preparation and movement of samples, substantially as claimed with the exception of specifying that the robotic arm has six degrees of freedom. Sugimoto et al show this feature to be old in the robotics art in line 64 of column 2. It would have been obvious to an ordinary practitioner in the art at the time of applicants' invention from the teaching of Sugimoto et al to modify the cryostat with associated robotic arm of Shafer by using an arm with six degrees of freedom to ensure that the samples can be placed where they are desired in the proper orientation.

***Allowable Subject Matter***

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

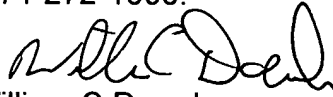
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshino shows a tactile sensor for a robotic arm and hand. Felder et al, Coelho et al and Shafer et al '217 show cryogenic processors with associated means of sample retrieval.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William C Doerrler  
Primary Examiner  
Art Unit 3744

WCD